

Unit Planning Guide: Grade __4_ Unit __8_ of _8__

Unit Title: Reinforcement of Multiplication and Division, Preview Grade 5	Pacing (Duration of Unit): 5 weeks
Grade: 4	Buffer Day(s):

Desired Results

Transfer Goals

Students will be able to independently use their learning to:

- **Make sense of problems and persevere in solving them.**
- **Reason abstractly and quantitatively.**
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- **Use appropriate tools strategically.**
- **Attend to precision.**
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Standards (Priority Standards in bold):

- **4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.**
- **4.NBT.MA.5a** Know multiplication facts and related division facts through 12×12 .
- **4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.**
- **4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using**

WIDA for English Language Learners

Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting

Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**

In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.)

<p>drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p> <ul style="list-style-type: none"> • 4.OA.3 Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. • 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm. • 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. • 5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. 	<p>appropriate language function expectations and scaffolds or supports.</p>
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<p align="center">Meaning (*Mostly assessed through Performance Tasks/Assessments)</p>

<p>Big Ideas: (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)</p> <ul style="list-style-type: none"> • Division is the inverse of multiplication • Multiples of numbers generate patterns. • Factors generate products. • Every number has an infinite number of multiples. • Knowledge of place value is necessary to accurately multiply multi-digit numbers. • Multiplication is repeated addition, division is repeated subtraction. • Remainders may or may not be crucial. 	<p>Essential Questions: (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)</p> <ul style="list-style-type: none"> • Why should I multiply? Why should I divide? • What questions can be answered using multiplication or division • How many different methods of multiplying or dividing can I use. • What is the best method for multiplying or dividing? • When can I ignore a remainder?
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Acquisition (*Mostly assessed through traditional summative assessments)

Knowledge: Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

Students will know ...

- strategies for multiplying multi-digit whole numbers.
- an equation is a comparison.
- a whole number is a multiple of each of its factors.
- the formula for area involves multiplication.
- division can determine group size.
- division can determine number of groups.
- remainders have different effect on quotients.

Skills: The discrete skills and process students should be able to use independently (Bloom's Level of Learning should be noted in parentheses.)

Students will be skilled at:

- calculating and explaining methods for multiplication and division using multiple strategies. (applying)
- multiplying and dividing fluently. (remembering)
- generating and solving equations with an unknown number represented by a symbol. (evaluating)
- solving multi-step word problems using multiplication and division equations with a variable to represent an unknown quantity and assess reasonableness of the answer using estimation and mental computation. (applying)
- finding all factor pairs for a whole number in the range 1-100 and determine if it is prime or composite. (analyzing)
- interpreting remainders. (creating)